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881

A gigantic deep-sea Nucinellidae from the tropical West Pacific (Bivalvia: Protobranchia)

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Abstract

Nucinella boucheti n. sp. is described from a 1610–1580 m deep station in the Philippines (Musorstom 2 Expedition). Nucinellids are typically small, mostly not exceeding 5 mm, but the present species is 25 mm large, being by far the largest nucinellid so far known. The adaptive meaning of this case of gigantism remains open to speculation, but it may be an expression of a rapid diversification of the Holocene nucinellids. *Nucinella boucheti* n. sp. has numerous, thin and delicate subumbonal teeth, displaying a number of unusual shapes and contrasting with the few, rather coarse and stout teeth of the other nucinellids. This feature is believed to be due to allometric constraints related to the large size. With *N. boucheti*, 19 living species of nucinellids are known, 14 of which belonging to the genus *Nucinella*. The Central West Pacific, from Japan to South Australia, is the area with the maximum diversity of nucinellids (11 species).

Key words: Bivalvia**,** Nucinellidae, *Nucinella*, new species, deep-sea, gigantism, Philippines

Introduction

Since the work by Allen and Sanders (1969), the Nucinellidae are allocated in the protobranch order Solemyoidea, although they contrast markedly with the long-shelled edentulous typical representatives of this order. It is worth reporting the good description of the nucinellid shell given by Boss (1982: 1107): “The shell is nuculoid in shape, more or less ovately rounded, sometimes higher than long, rather thin and fragile, equivalve, and inequilateral with the umbos behind the midpoint of the dorsal margin, and small to minute in size, generally less than 5 mm in length. The surface is rather smooth and unsculptured and appears porcelaneous, not nacreous, but it is well calcified and covered by an olive-yellow to brownish periostracum. The posterior adductor muscle usually is absent, and the anterior adductor muscle is rather large; members are monomyarian or extreme heterom-

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